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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,287

09/18/2006

Tokuyuki Nakayama

034145.004

8454

441 7590 10/16/2009

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EXAMINER

NELSON, MICHAEL B

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

10/16/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,287	<b>Applicant(s)</b> NAKAYAMA ET AL.	
	<b>Examiner</b> MICHAEL B. NELSON	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-6,8-11,13-22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8-11,13-22 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/31/09 has been entered. Claims 1, 2, 4-6, 8-11, 13-22 and 24 are currently under examination on the merits.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 5, 8-11, 13-15, 19-22 and 24 rejected under 35 U.S.C. 102(b) as being anticipated by Toppan Printing Co (JP 2000-106034), see human translation.

Regarding claim 1, Toppan Printing Co. discloses a transparent conductive film ([0001]) with a transparent oxide film, a metallic film and another transparent oxide film coated onto a substrate ([0026]). As the materials for the transparent oxide film, gallium and indium are disclosed as being sputtered with oxygen to produce oxides ([0020]-[0021]). Since the materials are disclosed as being used either or in combination, the reference discloses an embodiment in which the gallium is used alone (i.e. 100%) in the oxide. Additionally, Toppan Printing Co discloses that there be a three layer structure ([0026]). The metal layer is disclosed as being an

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alloy of silver, copper and gold with ratios of 98.5%, 0.5% and 1.0% respectively ([0027]). The thickness of the metal layer is disclosed as being 13-15 nm ([0026]).

Regarding the transmittance and surface resistance, while Toppan Printing Co does not explicitly disclose the instant claimed values, given the substantially similar composition (i.e. metallic film layer, oxide film layer, thicknesses and overall layered structure) of the invention of Toppan Printing Co with the instant application, one having ordinary skill in the art would expect the transparent conductive film to exhibit the claimed properties.

Regarding claims 2, 4, 5, 8-11, 13-15, 19-22 and 24, Toppan Printing Co discloses all of the limitations as set forth above. Additionally, Toppan Printing Co discloses that there be a three layer structure ([0026]). The metal layer is disclosed as being an alloy of silver, copper and gold with ratios of 98.5%, 0.5% and 1.0% respectively ([0027]). The thickness of the metal layer is disclosed as being 13-15 nm ([0026]). The use in transparent electrodes is disclosed ([0001]).

Regarding the transmittance and surface resistance, while Toppan Printing Co does not explicitly disclose the instant claimed values, given the substantially similar composition (i.e. metallic film layer, oxide film layer, thicknesses and overall layered structure) of the invention of Toppan Printing Co with the instant application, one having ordinary skill in the art would expect the transparent conductive film to exhibit the claimed properties.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toppan Printing Co (JP 2000-106034), see human translation, as applied to claim 3 above, and further in view of Asahi Glass Co. (JP 09-291356), see machine translation.

Regarding claim 6, modified Toppan Printing Co discloses all of the limitations as set forth above. Toppan Printing Co does not explicitly disclose that the metallic film be a Ni and Au laminate. Asahi Glass Co discloses a transparent conductive film with a metallic laminate of Au and Ni ([0029]-[0032]). The film of Asahi Glass Co is disclosed as being excellent in, inter alia, alkali resistance ([0009]).

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The inventions of both modified Toppan Printing Co and Asahi Glass Co are drawn to the field of transparent conductive films and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the metallic layer of modified Toppan Printing Co by using the metallic Ni, Au laminate of Asahi Glass Co for the purposes of imparting improved alkali resistance.

8. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toppan Printing Co (JP 2000-106034), see human translation, as applied to claim 1 above, and further in view of Nippon Hoso Kyokai (JP 2004-127719), see English language equivalent Fujikake et al. (U.S. 2006/0152136).

Regarding claims 16-18, modified Toppan Printing Co discloses all of the limitations as set forth above. Modified Toppan Printing Co does not disclose the inclusion of a gas barrier film with the transparent conductive film. Fujikake et al. discloses a transparent conductive film on which it was known to use substrates made of, inter alia, polycarbonate ([0003]). The gas barrier layer is disclosed as being made of inter alia, silicon oxide ([0041]) and the placement of the gas barrier film, 2, within the structure of the stack in Fig. 1 shows that it is in between the transparent conductive layer, 1, and the resin base, 3 ([0049]). The film of Fujikake et al. is disclosed as exhibiting improved heat resistance and low moisture absorbance ([0013]).

The inventions of both modified Toppan Printing Co and Fujikake et al. are drawn to the field of transparent conductive films and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the transparent conductive film of modified Toppan Printing Co by including a gas barrier layer as taught by Fujikake et al. for the purposes of imparting improved heat resistance and lowered moisture absorbance.

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***Response to Arguments***

9. Applicant's arguments are moot in view of the new ground(s) of rejection which were necessitated by applicant's amendments. The previous 112 2<sup>nd</sup> paragraph rejections have been withdrawn. The remarks are based solely on the prior arts purported failure to teach the claimed gallium content but the primary reference teaches a 100% gallium content which reads on the claimed limitation.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner, Art Unit 1794

/MN/  
08/28/09